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NEWS 4	NOV 15	Derwent Indian patent publication number format enhanced
NEWS 5	NOV 19	WPIX enhanced with XML display format
NEWS 6	NOV 30	ICSD reloaded with enhancements
NEWS 7	DEC 04	LINPADOCLDB now available on STN
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NEWS 9	DEC 17	USPATOLD added to additional database clusters
NEWS 10	DEC 17	IMSDRUGCONF removed from database clusters and STN
NEWS 11	DEC 17	DGENE now includes more than 10 million sequences
NEWS 12	DEC 17	TOXCENTER enhanced with 2008 MeSH vocabulary in MEDLINE segment
NEWS 13	DEC 17	MEDLINE and LMEDLINE updated with 2008 MeSH vocabulary
NEWS 14	DEC 17	CA/CAplus enhanced with new custom IPC display formats
NEWS 15	DEC 17	STN Viewer enhanced with full-text patent content from USPATOLD
NEWS 16	JAN 02	STN pricing information for 2008 now available
NEWS 17	JAN 16	CAS patent coverage enhanced to include exemplified prophetic substances
NEWS 18	JAN 28	USPATFULL, USPAT2, and USPATOLD enhanced with new custom IPC display formats
NEWS 19	JAN 28	MARPAT searching enhanced
NEWS 20	JAN 28	USGENE now provides USPTO sequence data within 3 days of publication
NEWS 21	JAN 28	TOXCENTER enhanced with reloaded MEDLINE segment
NEWS 22	JAN 28	MEDLINE and LMEDLINE reloaded with enhancements
NEWS 23	FEB 08	STN Express, Version 8.3, now available
NEWS 24	FEB 20	PCI now available as a replacement to DPCI
NEWS 25	FEB 25	IFIREF reloaded with enhancements
NEWS 26	FEB 25	IMSPRODUCT reloaded with enhancements
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SESSION
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=> s recrystallization?
      26539 RECRYSTALLIZATION?
      73860 RECRYSTN
      1988 RECRYSTNS
      75252 RECRYSTN
          (RECRYSTN OR RECRYSTNS)
L1      79276 RECRYSTALLIZATION?
          (RECRYSTALLIZATION? OR RECRYSTN)

=> s l1 () aromatic () hydrocarbon?
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      9932 AROMATICS
      248114 AROMATIC
          (AROMATIC OR AROMATICS)
      347486 AROM
      17088 AROMS
      356478 AROM
          (AROM OR AROMS)
      482385 AROMATIC
          (AROMATIC OR AROM)
      541930 HYDROCARBON?
L2      3 L1 (W) AROMATIC (W) HYDROCARBON?

=> s l2 and review/dt
      2120441 REVIEW/DT
L3      0 L2 AND REVIEW/DT

=> s l1 and review/dt
      2120441 REVIEW/DT
L4      1445 L1 AND REVIEW/DT

=> s l4 and solvent?
      915880 SOLVENT?
L5      37 L4 AND SOLVENT?

=> s l5 and aromatic?
      256850 AROMATIC?
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      17088 AROMS
      356478 AROM
          (AROM OR AROMS)
      488666 AROMATIC?
          (AROMATIC? OR AROM)
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L6

O L5 AND AROMATIC?

=> d 15, ibib abs, 1-37

L5 ANSWER 1 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:1083482 HCPLUS
TITLE: Prospect on refinement of energetic materials
AUTHOR(S): Jia, Yu; Wang, Jingyu
CORPORATE SOURCE: Department of Environmental and Safety Engineering,
North University of China, Taiyuan, 030051, Peop. Rep.
China
SOURCE: Sichuan Binggong Xuebao (2005), 26(2), 19-22
CODEN: SBXUFD; ISSN: 1006-0707
PUBLISHER: Sichuan Binggong Xuebao Bianjibu
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese
AB A review, with 23 refs., is given on the introduction of the research progress on refinement technol. of energetic materials at home and abroad. The refining technologies, such as phys. grinding, solvent-non-solvent recrystn., microemulsion refinement, impinging stream pulverization, etc. are briefly introduced. The refinement technol. of energetic materials are prospected.

L5 ANSWER 2 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:795543 HCPLUS
DOCUMENT NUMBER: 147:454842
TITLE: Preparation of superfine medicament particles by supercritical fluid recrystallization technology
AUTHOR(S): Liu, Yan; Wang, Weiqiang; Xing, Xiaowei
CORPORATE SOURCE: Sch. Mechanical Eng., Shandong Univ., Jinan, Shandong, 250061, Peop. Rep. China
SOURCE: Huagong Jinzhan (2007), 26(3), 377-380
CODEN: HUJIEK; ISSN: 1000-6613
PUBLISHER: Huaxue Gongye Chubanshe
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese
AB A review. The conventional methods of preparing superfine medicament particles are presented. Two common methods of supercrit. fluid recrystn., including rapid expansion of supercrit. solution and supercrit. anti-solvent crystallization, are introduced and their application progress are reviewed with 28 refs. The research works of supercrit. fluid recrystn. in the field of traditional Chinese medicine are also reviewed. The prospects of supercrit. fluids recrystn. technol. as a new way of preparing fine particles of Chinese traditional medicine are also presented. Some existing problems, such as low yield, high cost, technique, and equipment are to be solved.

L5 ANSWER 3 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:516137 HCPLUS
DOCUMENT NUMBER: 148:179595
TITLE: Mechanism and scope of preferential enrichment, a symmetry-breaking enantiomeric resolution phenomenon
AUTHOR(S): Tamura, Rui; Takahashi, Hiroki; Fujimoto, Daisuke; Ushio, Takanori
CORPORATE SOURCE: Graduate School of Human and Environmental Studies, Kyoto University, Sakyo-ku, 606-8501, Japan
SOURCE: Topics in Current Chemistry (2007), 269(Novel Optical

Resolution Technologies), 53-82
CODEN: TPCCAQ; ISSN: 0340-1022
PUBLISHER: Springer GmbH
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. The mechanism of preferential enrichment, an unusually symmetry-breaking enantiomeric resolution phenomenon that is observed upon simple recrystn. of a certain kind of organic racemic crystal from the usual organic solvents without any external chiral element, was rationalized in terms of a complexity system involving multistage processes that affect each other. These processes comprise: (1) preferential homochiral mol. association to give 1-dimensional (1D) R and S chains in solution; (2) formation of γ -form prenucleation aggregates consisting of the same homochiral 1-dimensional chains; (3) nucleation and crystal growth of the metastable γ -form crystal composed of irregular alignment of the homochiral 1-dimensional R and S chains; (4) the solvent-assisted solid-to-solid type of polymorphic transition of the incipient γ -form crystal into the more stable polymorphic form, such as the α -, δ -, or ϵ -form; and (5) partial crystal disintegration in the transformed crystal to release excess R or S mols. into solution. Based on this mechanism, both induction and inhibition of preferential enrichment were achieved by controlling the mode of polymorphic transition during crystallization with appropriate seed crystals. The authors call this forced polymorphic transition on the surface of a seed crystal epitaxial transition.
REFERENCE COUNT: 65 THERE ARE 65 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1083842 HCPLUS
DOCUMENT NUMBER: 145:399778
TITLE: Particle formation using supercritical fluids - a short review
AUTHOR(S): Knez, Zeljko
CORPORATE SOURCE: Faculty of Chemistry and Chemical Engineering, University of Maribor, Maribor, Slovenia
SOURCE: Chemical Industry & Chemical Engineering Quarterly (2006), 12(3), 141-146
CODEN: CICEC2; ISSN: 1451-9372
PUBLISHER: Association of Chemical Engineers
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review of fundamentals and on recent advances of particle formation and design processes using supercrit. fluids, on their applications and the technol. advantages and disadvantages of various processes. Particle formation and the design of solid particles and powdery composites with unique properties is at the moment one of major the developments of supercrit. fluid (synonyms: dense gases, dense fluids, high pressure) applications. Conventional well-known processes for the particle-size redistribution of solid materials are crushing and grinding (which for some compds. are carried out at cryogenic temps.), air micronization, sublimation, and recrystn. from solution. There are several problems associated with the above-mentioned processes. Some substances are unstable under conventional milling conditions, in recrystn. processes the product is contaminated with solvent, and waste solvent streams are produced. The application of supercrit. fluids may overcome the drawbacks of conventional processes, and powders and composites with special characteristics can be produced. Several

processes for the formation and design of solid particles using dense gases have been studied intensively. The unique thermodn. and fluid-dynamic properties of supercrit. fluids can also be used for the impregnation of solid particles, for the formation of solid ponderous emulsions, particle coatings, e.g. for the formation of solids with unique properties for use in different applications.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:943765 HCPLUS
DOCUMENT NUMBER: 146:124559
TITLE: Research and development of extraction metallurgy and application of rubidium and its compounds
AUTHOR(S): Niu, Huixian
CORPORATE SOURCE: General Research Institute for Non-Ferrous Metals, Beijing, 100088, Peop. Rep. China
SOURCE: Xiyou Jinshu (2006), 30(4), 523-527
CODEN: XIJID9; ISSN: 0258-7076
PUBLISHER: Xiyou Jinshu Bianjibu
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese
AB A review. A review of the separation of rubidium and its compds. in use of repeated fractional re-crystallization, precipitation, ion-exchange, extraction, etc. from all kinds of the Rb-bearing resources was presented. The applications of rubidium and its compds. were analyzed in the national defense, aerospace industry, genetic engineering, medicine, energy industry and environmental science, such as frequency reference oscillators, specialty glasses, photoelec. cells and tubes, radioactive tracers. The aim was to promote widespread applications and tech. development of rubidium and its compds. in the various fields, especially in the hi-tech field.

L5 ANSWER 6 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:467411 HCPLUS
DOCUMENT NUMBER: 146:175233
TITLE: Elaboration of hybrid nanocluster materials by solution chemistry
AUTHOR(S): Cordier, Stephane; Kirakci, Kaplan; Pilet, Guillaume; Mery, Denise; Astruc, Didier; Perrin, Andre; Perrin, Christiane
CORPORATE SOURCE: LCSIM, Moleculaire UMR 6511 CNRS, Institut de Chimie de Rennes, Universite de Rennes 1, Rennes, 35042, Fr.
SOURCE: Progress in Solid State Chemistry (2006), Volume Date 2005, 33(2-4), 81-88
CODEN: PSSTAW; ISSN: 0079-6786
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review is presented on hybrid organic/inorg. nanoclusters. The $[(M_6Li_{12})La_6]^{n-}$ and $[(M_6Li_8)La_6]$ units (a = apical, i = inner) constitute the basic building blocks in the octahedral cluster chemical. Nano-sized metallic clusters are easily obtained by solid state synthesis with transition elements associated with halogen or chalcogen. The intrinsic properties of M6 cluster units-one or two electron reversible redox process, magnetism and luminescence-depend on the nature of the metal and ligands. The solubilisation of M6 solid state compds. provides $[(M_6Li_{12})La_6]^{n-}$ or $[(M_6Li_8)La_6]^{n-}$ building blocks with individual

properties that can be further used for the design of hybrid organic/inorg. materials. Several examples of solid state precursors are presented as well as substitution reactions of apical ligands in solution. Indeed, hexacyano M₆ clusters were obtained by direct reaction of solid state precursors in aqueous KCN solns. Low dimensional frameworks are subsequently obtained by recrystn. of hexacyano M₆ clusters with transition elements. The functionalization of cluster proceeds in two steps. The first one consists in the replacement of apical halogens of cluster unit precursors by labile groups as CF₃SO₃ (triflate) or solvent mols. after solution reaction. The second one consists in the substitution of the labile groups by functionalized phenolate or pyridine ligands.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:277616 HCPLUS
DOCUMENT NUMBER: 145:508858
TITLE: Metals recovery system from industrial effluents
AUTHOR(S): Tanaka, Mikiya
CORPORATE SOURCE: Res. Inst. Environ. Manage. Technol., National Institute of Advanced Industrial Science and Technology, Japan
SOURCE: Shigen Kankyo Taisaku (2006), 42(3), 52-57
CODEN: SKTAET; ISSN: 0916-9172
PUBLISHER: Kankyo Komyunikeshonzu
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review on the status of metal-plating industry, the established recycling system, and newly developing systems using functional coagulator, sulfide precipitation, recrystn., and solvent -extraction

L5 ANSWER 8 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:156050 HCPLUS
DOCUMENT NUMBER: 144:360540
TITLE: Multi-dimensional crystal structures and unique solid-state properties of heterocyclic thiazyl radicals and related materials
AUTHOR(S): Awaga, Kunio; Tanaka, Toshiyuki; Shirai, Takahiro; Fujimori, Masato; Suzuki, Yosuke; Yoshikawa, Hirofumi; Fujita, Wataru
CORPORATE SOURCE: Department of Chemistry, Graduate School of Science, Nagoya University, Chikusa-ku, Nagoya, 464-8602, Japan
SOURCE: Bulletin of the Chemical Society of Japan (2006), 79(1), 25-34
CODEN: BCSJA8; ISSN: 0009-2673
PUBLISHER: Chemical Society of Japan
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. The crystal structures and magnetic properties of heterocyclic thiazyl radicals and related materials were discussed. TTTA (= 1,3,5-trithia-2,4,6-triazapentalenyl) exhibited a 1st-order phase transition between a paramagnetic high-temperature (HT) phase and a diamagnetic low-temperature (LT) phase, with a wide thermal hysteresis loop over the temperature range 230-305 K. The phase control of TTTA was achieved by pressure and by light irradiation. BDTA (=1,3,2-benzodithiazolyl) also exhibited a diamagnetic-paramagnetic phase transition above room temperature. However, fresh

samples always exhibited a superheating of the LT phase that resulted in a double melting (melt-recrystn.-melt process) and supercooling of the HT phase, which in turn led to an antiferromagnetic ordering at 11 K. The mol. compds. of thiazyl radicals were prepared: TTTA formed a coordination polymer structure in the TTTA-[Cu(hfac)₂ (=bis(hexafluoroacetylacetato)-Cu(II))] crystal, where a ferromagnetic coupling was found between the organic and inorg. species. The cation radical salts, [BBDTA (=benzo[1,2-d:4,5-d']bis[1,3,2]dithiazole)]·M Cl₄ (M = Ga and Fe), exhibited ferromagnetic ordering at 7 K and ferrimagnetic ordering at 44 K after evaporation of crystal solvents. The authors also grew crystals of M-TTDPz (TTDPz = tetrakis(thiadiazole)porphyrazine and M = H₂, Fe, Co, Ni, Cu, and Zn) and performed their structural analyses. Their crystal structures depend strongly on the central metal ion and could be classified into three forms: α , β , and γ .

REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:466075 HCPLUS
DOCUMENT NUMBER: 144:22428
TITLE: Chirality and selected organic chemical relationships
AUTHOR(S): Gogassy, Elemer; Schindler, Jozsef; Kiss, Violetta;
Pavlovics, Emese
CORPORATE SOURCE: Budapesti Muszaki es Gazdasagudomanyi Egyetem,
Budapest, Hung.
SOURCE: Magyar Kemiai Folyoirat, Kemiai Kozlemenek (2004),
109-110(2), 64-70
CODEN: MKFKAL; ISSN: 1418-9933
PUBLISHER: Magyar Kemikusok Egyesulete
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Hungarian

AB A review. After the ground-breaking work of Pasteur and later Pope and Peachey', stereochem., organic chemical and chemical resolution operations have been

reached a speedy development. The interaction of the accumulated knowledge enriched the possibilities of the separation of different mixts. of chiral compds. with unexpected results. From these possibilities we have presented some examples in this report without the demand of completeness. The examples show the reactions of the racemic compds. with half-equivalent resolving agents, the conditions of the distribution of the diastereoisomer and one of the enantiomers between two phases, as well as the possibilities of their separation. These are: the salt-salt reactions; the application of immiscible solvents with or without crystallization; the separation of the solvent-free reaction mixture by extraction using supercrit. carbon-dioxide; reaction of the racemic compound and the resolving agent in molten or in solid phase; separation of the enantiomer from the mol. complex diastereoisomer by sublimation, distillation, as well as fractional modification of these former operations. Some examples have been presented for the role of the solvent: sometimes only the formation of the crystal solvate could make the resolution possible, or it could be that which enantiomer was present in the diastereoisomer depended on the solvent. We have called the attention to the fact that kinetic control could be standing out during the formation of the diastereoisomers, too. Some examples have been presented that a racemic compound could favorably be resolved with resolution agents having related structure. We have presented the behavior of mixts. of racemic compds. having related structure, and the mixture of related resolving agents, too.

We have referred to the possibilities of the application of calcium salts. Finally we have presented the separation of non-racemic enantiomer mixture without the use of foreign chiral reagent. Examples have been shown for the separation of the enantiomer mixts. by crystallization of melt, recrystn ., fractional precipitation and extraction after partial salt-formation. Finally, we would like to direct the reader's attention the fact that during the reaction of chiral compds. with any composition as well as during the different sepn. there is a nonlinear relation between the starting ee0 and the ee's obtained or the ee's in the phases.

L5 ANSWER 10 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:1106728 HCAPLUS
DOCUMENT NUMBER: 142:76759
TITLE: Preparation of ultrafine particles by using supercritical CO2
AUTHOR(S): Nagahama, Kunio
CORPORATE SOURCE: Grad. Sch. Eng., Tokyo Metrop. Univ., Japan
SOURCE: Bunri Gijutsu (2004), 34(6), 370-378
CODEN: BUGIF8; ISSN: 1343-7860
PUBLISHER: Bunri Gijutsukai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review. The topics reviews on preparation of ultrafine particles by using supercrit. CO2, i.e., SAS (supercrit. fluid anti-solvent) process, especially by continuous ASES (aerosol solvent extraction system) process. The process employs recrystn. of a solute first dissolved in a solvent upon mixing with a CO2 supercrit. fluid working as anti-solvent and subsequent high-pressure spraying of the resultant high-pressure fluid out from the crystallizer. The topics further include expts. of preparing ultrafine particles of organic pigments by the process.

L5 ANSWER 11 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:858669 HCAPLUS
DOCUMENT NUMBER: 139:339428
TITLE: Progress in generation of fine particles using supercritical fluid precipitation
AUTHOR(S): He, Wenzhi; Jiang, Zhaohua; Suo, Quanling
CORPORATE SOURCE: Department of Applied Chemistry, Harbin Institute of Technology, Harbin, 150006, Peop. Rep. China
SOURCE: Huaxue Jinzhan (2003), 15(5), 361-366
CODEN: HJINEL; ISSN: 1005-281X
PUBLISHER: Huaxue Jinzhan Bianjibu
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese

AB A review of the concepts, characteristics and the related application of the supercrit. fluid precipitation (SFP) processes are introduced, and current issues relating to the SFP processes are addressed. The SFP technologies, such as RESS and SAS, are novel micronization processes having promising applications in various fields such as inorg. chemical, organic chemical and pharmaceuticals. RESS consists of saturating a supercrit. fluid (SF) with the substrate (s), then depressurizing the solution through a nozzle into a low-pressure chamber to cause an extremely rapid nucleation of the substrate (s) in the form of very small particles. SAS consists of decreasing the solvent powder of a liquid solvent in which the substrate is dissolved by saturating it with a SF, resulting in the substrate precipitation or recrystn. Based on RESS and SAS, some

improved SFP technologies, such as AESE, SEDS and SAS-EM were developed to obtain smaller particles. AESE process involves spraying the solution through a nozzle as fine drops into SF anti-solvent. SEDS, an improvement of ASES, consists of using a nozzle with two coaxial passages to achieve smaller drops and intense mixing of SF and solution for increased transfer rates. SAS-EM, a modification of SAS, depends on deflecting the solution jet by a surface vibrating at an ultrasonic frequency that atomizes the jet into small micro drops. A sintered porous plate or 'frit' nozzle, which could be manufactured more easily and was unlikely to be plugged due to blockage by the presence of a single particle in comparison with capillary nozzles, was used in RESS process. Specialized nozzles are used in AESE to generate and focus the preferred high frequency sonic waves that have been shown to maximize the production of extremely small droplets in the precipitation zone, leading to the precipitation of the very small particles.

L5 ANSWER 12 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:353508 HCPLUS

DOCUMENT NUMBER: 139:104692

TITLE: Research on microstructure and physical properties of recrystallized graphite doped with zirconium

AUTHOR(S): Qiu, Hai-Peng; Song, Yong-Zhong; Liu, Lang; Zhai, Geng-Tai

CORPORATE SOURCE: Institute of Coal Chemistry, Chinese Academy of Science, Taiyuan, 030001, Peop. Rep. China

SOURCE: Hangkong Cailiao Xuebao (2003), 23(1), 29-33
CODEN: HCXUFZ; ISSN: 1005-5053

PUBLISHER: Hangkong Cailiao Xuebao Bianjibu

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Chinese

AB A review. The recrystd. graphite was prepared from filler of calcined coke and binder of coal-tar pitch and zirconium by the hot-pressing progress in order to investigate the effects of amount of zirconium on the thermal conductivity, elec. conductivity, bending strength and microstructure of recrystd.

graphite. Exptl. results showed that the recrystd. graphite with a amount of zirconium exhibited higher thermal conductivity, higher elec. conductivity and

bending strength than the pure graphite by the same process. The dopant concentration of zirconium with 6 weight% might greatly decrease the elec. resistivity of recrystd. graphite, but more dopant zirconium changed elec. resistivity of recrystd. graphite a little. For the high conductivity direction,

the thermal conductivity of RG-Zr-12 was 410 W/(m · k). Microstructural analyses revealed that the degree of graphitization of recrystd. graphite and coherence length of La increased and layers spacing of microcryst. decreased with increasing zirconium concentration. The degree of graphitization of recrystd. graphite was 97.7% and coherence length of La was 475 nm when the amount of dopant zirconium was 12 weight%. Composition analyses indicated that

zirconium added to the carbon substrate was in the form of ZrC ppts. by XRD and SEM. The mechanism of the solution-precipitation using liquid solvent could be explained the catalytic mechanism of zirconium dopant servers as catalyst to accelerate the graphitization of carbon substrates.

L5 ANSWER 13 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:931833 HCPLUS

DOCUMENT NUMBER: 138:273227

TITLE: Advances in synthesis and purification technology of 2,6-naphthalenedicarboxylic acid

AUTHOR(S): Jiao, Ning-ning; Wang, Jian-ming

CORPORATE SOURCE: Petrochemical Research Institute, Lanzhou Petrochemical Co., PetroChina, Lanzhou, 730060, Peop. Rep. China

SOURCE: Shihua Jishu Yu Yingyong (2002), 20(6), 410-416

CODEN: SJYIF4; ISSN: 1009-0045

PUBLISHER: Shihua Jishu Yu Yingyong Bianjibu

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Chinese

AB A review. The reaction mechanism and process conditions of oxidation of 2,6-dimethylnaphthalene, 2,6-diisopropyl naphthalene, 2,6-alkylacetyl naphthalene and 2,6-diethyl naphthalene for 2,6-naphthalenedicarboxylic acid (2,6-NDCA) were discussed. The process conditions of Henkel process and carbonylation were also discussed. The process conditions of esterification, hydrogenation and solvent recrystn. for 2,6-NDCA were stated. The oxidation and purification methods were analyzed and compared. The suggestions on the development of 2,6-NDCA was made.

L5 ANSWER 14 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:894368 HCPLUS

DOCUMENT NUMBER: 138:355585

TITLE: Solvent characteristics of supercritical fluid and application to microparticle preparation

AUTHOR(S): Uchida, Hirohisa

CORPORATE SOURCE: Department of Engineering, Tokyo University Agriculture and Technology, Koganei-shi, Tokyo, 184-8588, Japan

SOURCE: Seikei Kako (2002), 14(10), 629-634

CODEN: SIKAE4; ISSN: 0915-4027

PUBLISHER: Purasuchikku Seikei Kako Gakkai

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A review of the title subject, including Rapid Expansion of supercrit. Solns. (RESS), Gas Anti-Solvent Recrystn. (GAS), and supercrit. fluid crystallization

L5 ANSWER 15 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:542236 HCPLUS

DOCUMENT NUMBER: 137:142306

TITLE: Crystallization technology using supercritical fluids and its application to separation process

AUTHOR(S): Uchida, Hirohisa; Matsuoka, Masakuni

CORPORATE SOURCE: Fac. Eng., Tokyo Univ. Agric. Technol., Japan

SOURCE: Bunri Gijutsu (2002), 32(3), 179-183

CODEN: BUGIF8; ISSN: 1343-7860

PUBLISHER: Bunri Gijutsukai

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A review on crystallization technologies using supercrit. fluids and its application to separation process. The topics include a modified retrograde crystallization process with circulation of supercrit. carbon dioxide for separation of a mixture containing two components, RESS (rapid expansion of supercrit. solns.) process, and SAS (supercrit. fluid antisolvent recrystn.)

process.

L5 ANSWER 16 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:916515 HCPLUS
DOCUMENT NUMBER: 136:160472
TITLE: Filtration and recrystallization
AUTHOR(S): Yokosu, Hirochika
CORPORATE SOURCE: Tokyo Kasei Kogyo Co., Ltd., Japan
SOURCE: Bunseki (2001), (11), 606-607
CODEN: BUNSD3; ISSN: 0386-2178
PUBLISHER: Nippon Bunseki Kagakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review with refs. is presented. Selection of solvents, dissoln. of crystals, heat filtration, and crystallization deposition are discussed.

L5 ANSWER 17 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:456040 HCPLUS
DOCUMENT NUMBER: 133:58369
TITLE: Use of microwave radiation in phase transfer reactions in solvent-free systems
AUTHOR(S): Bogdal, Dariusz
CORPORATE SOURCE: Politechnika Krakowska im. Tadeusza Kosciuszki, Krakow, Pol.
SOURCE: Monografia - Politechnika Krakowska im. Tadeusza Kosciuszki (1999), 248, 1-134
CODEN: MPKKEH; ISSN: 0860-097X
PUBLISHER: Politechnika Krakowska im. Tadeusza Kosciuszki
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Polish
AB A review with 229 refs. The microwave region of the electromagnetic spectrum lies between IR radiation and radio frequencies and corresponds to wavelengths of 1 cm to 1 m (frequencies of 30 GHz to 300 MHz resp.). Wavelengths of 1-25 cm are used for radar transmissions, and the remaining wavelength range is used for telecommunications. In order not to interfere with these applications, domestic and industrial microwave heaters are required to operate at either 12.2 cm (2.45 GHz) or 33.3 cm (900 MHz). Domestic microwave ovens operate at 2.45 GHz. Heating in microwave ovens uses the ability of some liqs. and solids to transform electromagnetic energy into heat and thereby drive chemical reactions. Since the observed thermal effect depends on the properties of material exposed to microwave irradiation (materials for chemical reactions do not interact equally with the commonly used microwave frequencies), it is possible to change the reaction selectivity and obtain an alternative product distribution in comparison to the reaction carried out under conventional conditions. In the last decade, microwaves have attracted the attention of synthetic organic chemists, who have started to apply this unconventional technique of material heating as routine in their own work. The reduced time scales of a great number of chemical reactions under microwave conditions is the main reason that microwave techniques became more and more attractive. Microwave-assisted organic syntheses are described in the context of their the most significant examples. The work consists of two parts. The 1st part gives a description of factors causing microwave heating, the behavior of different materials under microwave irradiation, and discussion of non-thermal microwave effects, i.e., inadequate to the observed reaction-temperature acceleration of reaction rate. Then the most interesting examples of chemical syntheses which occur under microwave conditions are

reviewed. The 2nd part presents the results of the author's study of the application of microwaves to organic synthesis. The use of microwave irradiation

in combination with solventless phase-transfer catalytic conditions led to elaboration of novel methods of such syntheses as: alkylation of azaheterocyclic compds., alkylation of amides and lactams, alkylation of compds. with active methylene groups, synthesis of ethers by Williamson's methods, synthesis of sym. ethers directly from alkyl halides. These syntheses used to be carried out under phase-transfer catalytic conditions (PTC) invented by Makosza. The use of microwave heating coupled with solventless phase-transfer catalytic conditions significantly accelerated reaction rates. Furthermore, mixts. of 2 neat reagents can eventually lead to a reaction when the mixts. were under the influence of microwave irradiation. A number of coumarin derivs. were prepared by the Knoevenagel condensation of salicylaldehyde derivs. with 1,3-dicarbonyl compds. In most cases the purity of reaction products was so good that there was no need for further recrystn. of products. Finally, a kinetic study and anal. of non-thermal microwave effects during the synthesis of coumarins, i.e., measurement by comparison of the reaction rate under microwave and conventional conditions. The investigation of the reaction rate of $\text{o-HOC}_6\text{H}_4\text{CHO}$ and $\text{CH}_2(\text{CO}_2\text{Et})_2$ showed that microwaves were capable of accelerating the reaction in comparison with that under conventional conditions. The reaction-rate coeffs. were >3 times higher during microwave irradiation than conventional heating. Under certain conditions, one could observe a non-thermal microwave effect.

L5 ANSWER 18 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:263770 HCPLUS

DOCUMENT NUMBER: 133:4293

TITLE: Polymorphism and pseudopolymorphism in organic crystals. A cambridge structural database study

AUTHOR(S): Sarma, Jagarlapudi A. R. P.; Desiraju, Gautam R.

CORPORATE SOURCE: Physical and Inorganic Chemistry Division, Indian Institute of Chemical Technology, Hyderabad, 500 007, India

SOURCE: NATO ASI Series, Series C: Mathematical and Physical Sciences (1999), 539(Crystal Engineering: The Design and Application of Functional Solids), 325-356

CODEN: NSCSDW; ISSN: 0258-2023

PUBLISHER: Kluwer Academic Publishers

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review, with .apprx.25 refs. An anal. with the Cambridge Structural Database (CSD) of polymorphism among single residue organic and organometallic entries reveals that the likelihood of the phenomenon is low and more significantly, does not vary with the C content of the mol. in the range C1 to C80. Larger mols. with a larger number of potential recognition sites during crystallization also cascade into their stable crystal structures more efficiently than do smaller mols. In effect, polymorphism is far less of a problem in crystal engineering and related disciplines than was held previously. Compds. that contain conformationally flexible groups which can also form strong H bonds, for example -OH and -NH2 are more likely to occur in polymorphic forms. A description of polymorphism in terms of patterns of similar or dissimilar supramol. synthons is also given. Polymorphism occurs when the same synthon can be constructed in different ways. This can happen when there are multiple occurrences of the same functional group in a mol. The phenomenon of pseudopolymorphism also was examined with the CSD. The inclusion of H2O in organic crystals is

especially common while CH₂Cl₂ is included in organometallics. Other H bonding solvents like DMSO, DMF and dioxane are also included frequently.

When the occurrence of pseudopolymorphism is corrected for solvent usage, it appears that EtOH and hexane occur in crystals far less than their usage as recrystn. solvents might indicate.

Certain compds. like resorcinol, pyrazine-2-carboxamide and N-2-thiazolylsulfanilamide show strikingly different polymorphic forms. Yet, in the end, polymorphism is essentially a random phenomenon and only certain combinations of mol. size, shape and functionality, or in a supramol. sense, a particular flexibility in synthon construction can lead to its occurrence.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 19 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:698745 HCAPLUS

DOCUMENT NUMBER: 132:266692

TITLE: Gas antisolvent recrystallization of specialty chemicals

AUTHOR(S): Muhrer, Gerhard; Mazzotti, Marco

CORPORATE SOURCE: Institut fur Verfahrenstechnik, ETH Zurich, Zurich, CH-8092, Switz.

SOURCE: International Symposium on Industrial Crystallization, 14th, Cambridge, United Kingdom, Sept. 12-16, 1999 (1999), 330-339. Institution of Chemical Engineers: Rugby, UK.

CODEN: 68IRAJ

DOCUMENT TYPE: Conference; General Review; (computer optical disk)

LANGUAGE: English

AB A review with 84 refs. The need for the manufacturing of micron or sub-micron particles with narrow size distributions is gaining more and more importance in the production of specialty chems. and pharmaceuticals. In the last case microparticles are often intended for controlled drug release applications. There is therefore an increasing interest in developing technologies which, contrary to conventional techniques, allow microparticles with controlled particle size distribution and product quality to be produced under mild and inert conditions. Supercrit. fluid technol., particularly when using carbon dioxide, offers promising possibilities for tackling this challenge, e.g., through the Rapid Expansion of Supercrit. Solns., Precipitation with Compressed Antisolvent, and

GAS

(Gas Anti-Solvent) techniques. In particular, GAS recrystn. exploits the low solubility of pharmaceutical compds. in supercrit. carbon dioxide, which is used as antisolvent for the solute initially solubilized in a conventional solvent. Upon mixing by adding compressed carbon dioxide to the initial solution in a vessel, the solution is expanded, thus reducing its solvent power, and the solute ppts. Numerous exptl. investigations have proved the attractiveness of these processes in terms of product quality; however, the understanding of their fundamentals and of the effects of individual process parameters is still very limited. The development of applications of the GAS recrystn. technol. requires that the gap between exptl. evidence and theor. understanding is filled.

REFERENCE COUNT: 84 THERE ARE 84 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 20 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:582279 HCPLUS
DOCUMENT NUMBER: 132:209471
TITLE: Surfactant solubility
AUTHOR(S): Laughlin, Robert G.
CORPORATE SOURCE: The Procter & Gamble Company, Cincinnati, OH, USA
SOURCE: Surfactant Science Series (1999), 82 (Handbook of Detergents, Part A), 99-131
CODEN: SFSSA5; ISSN: 0081-9603
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 102 refs. The solubility of surfactants in organic solvents varies widely and is strongly influenced by the m.p. of the compound and whether the solvent is a hydrogen bond donor. In hydrogen-bonding solvents, one form of the solubility boundary is found, whereas in both nonpolar and dipolar aprotic solvents, another form is found. The existence of dipolar aprotic bonds in solvent mols. does not dramatically enhance solubilities; only the existence of hydrogen-bonding interactions with the surfactant seems to strongly enhance solubility. In hydrogen-bonding solvents, the plateau region of the generic recrystn. phase diagram may shrink almost to the vanishing point.

REFERENCE COUNT: 130 THERE ARE 130 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 21 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:192506 HCPLUS
DOCUMENT NUMBER: 130:325405
TITLE: Poly(phenylene sulfide). Part I. Preparation and properties
AUTHOR(S): Halasa, Eugeniusz
CORPORATE SOURCE: Politechnika Rzeszowska, Wydzial Chemiczny, Warsaw, 35-329, Pol.
SOURCE: Polimery (Warsaw) (1999), 44(2), 79-86
CODEN: POLIA4; ISSN: 0032-2725
PUBLISHER: Instytut Chemii Przemyslowej
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Polish

AB A review with 24 refs. covering the methods of preparation and crystallization and recrystn. of poly(phenylene sulfide) (PPS.). PPS has been com. produced via homopolycondensation of alkali metal halo thiophenolates or heteropolycondensation of p-dibromobenzene with anhydrous sodium sulfide in polar organic solvents used as reaction media. PPS is an engineering polymer with excellent thermal resistance (long-time operation at 240°C); however, PPS is expensive. When heated to temps. exceeding 300°C, PPS undergoes cyclization, branching, and crosslinking processes which may lead under certain conditions to formation quasi-ladder linear structures. PPS is also resistant to chems. and solvents, but not to UV radiation. At temps. lower than 175°C, PPS is insol. in any solvent. The severe condensation conditions, corrosion of the equipment, and the toxicity of wastewaters and waste gases render production of PPS very difficult.

L5 ANSWER 22 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:561994 HCPLUS
DOCUMENT NUMBER: 129:268033

TITLE: Crystallization of Solid-State Materials via Decomplexation of Soluble Complexes

AUTHOR(S): Doxsee, Kenneth M.

CORPORATE SOURCE: Department of Chemistry, University of Oregon, Eugene, OR, 97403, USA

SOURCE: Chemistry of Materials (1998), 10(10), 2610-2618

CODEN: CMATEX; ISSN: 0897-4756

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review, with .apprx.89 refs. A variety of compds. which are at best sparingly soluble in aqueous media may be readily brought into solution through the formation of soluble coordination complexes. Modification of exptl. conditions through, e.g., dilution or slow removal of the complexing agent, leads to supersatn. and, consequently, crystallization of the original solid-state phase. This technique of decomplexation crystallization, both of simple inorg. coordination complexes and of complexes with macrocyclic organic chelating agents, offers the opportunity both to effect the recrystn. of sparingly soluble species and to modify their crystal morphol. Similarly, precursors for solid-state materials may be solubilized in nonaq. solvents through the formation of soluble complexes and then allowed to undergo reaction crystallization, allowing the examination of both solvent effects and chelation effects on the morphol. and phase of the resulting solid-state materials. These effects are often dramatic, and such complexation-mediated crystallization approaches offer promise for the facile preparation of metastable phases from simple precursors under ambient conditions.

REFERENCE COUNT: 101 THERE ARE 101 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 23 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:165638 HCPLUS

DOCUMENT NUMBER: 128:218757

TITLE: Crystallizing with compressed gases. New methods for the generation of smallest particles

AUTHOR(S): Berger, Thomas

CORPORATE SOURCE: Germany

SOURCE: Chemie-Anlagen + Verfahren (1998), 31(3), 86-88

CODEN: CHAVBZ; ISSN: 0009-2800

PUBLISHER: Konradin Verlag Robert Kohlhammer

DOCUMENT TYPE: Journal; General Review

LANGUAGE: German

AB A review, without refs. on new methods for the generation of smallest particles with defined properties, high cleanliness and narrow particle size distribution by crystallizing with compressed gases (i.e. CO₂). The rapid expansion of supercrit. solns. method (RESS), the gas anti-solvent recrystn. method (GASR), and the precipitation with compressed antisolvents method (PCA) are described, including tech. details of construction of the plants and their operating conditions. Schemes of the different plants are given.

L5 ANSWER 24 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:732682 HCPLUS

DOCUMENT NUMBER: 127:345347

TITLE: Biofine chemicals. Related materials and their

AUTHOR(S): application. Large scale syntheses of insect pheromones by practical chemico-enzymic procedures
CORPORATE SOURCE: Omata, Tetsuo
Technol. Plann. Dep., Nitto Denko Corp., Ibaraki, 567, Japan
SOURCE: Kikan Kagaku Sosetsu (1997), 33, 131-140
CODEN: KKSOEC
PUBLISHER: Nippon Kagakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review with 35 refs. Various kinds of optically active insect pheromones were prepared in large scale productions by the combination of asym. syntheses and lipase-catalyzed resolns. A sex pheromone of Japanese beetle (*Popillia japonica* Newman) was synthesized large scale by lipase-catalyzed enantioselective acylation and lactonization as the key reactions from Me 4-hydroxy-5-tetradecynoate as an important intermediate. Shapeless asym. epoxidn. of 8-methyl-2-nonen-1-ol at room temperature gave (2S,3R)-2,3-epoxy-8-methyl-1-nonal with 52% e.e. Thus, the obtained epoxy alc. with low optical purity was subjected to lipase-catalyzed enantioselective acylation, and the optical purity was raised to 85% e.e. Recrystn. of the corresponding 3,5-dinitrobenzoate led to optically pure epoxy alc., which is the precursor of (+)-disparlure, the sex pheromone of gypsy moth (*Lymantria dispar* L.). This procedure was employed in (+)-disparlure production on a kilogram scale. A sex pheromone of cupreous chafer (*Anomala cuprea* Hope) with high optical purity was prepared from 4-hydroxy-5-dodecynonitrile by lipase catalyzing-acylation in an organic solvent. (R,S)-hydroxy nitrile was acylated with n-butyric anhydride by lipase PS to yield corresponding (R)-ester with 90% e.e. This enzymic esterification was repeated twice to obtain optically pure (R)-hydroxy nitrile, the precursor of the sex pheromone of cupreous chafer. Sex pheromones of *Hyphantrea cunea* Drury were produced by Sharpless asym. epoxidn. of 2,5,8-undecatrien-1-ol as a key step. Asym. epoxidn. on a large scale does not always give the high optical purity to corresponding epoxy alc., but in the case of these pheromones, 70% e.e. is enough to employ in practical application to capturing the adult male pests. Chemico-enzymic procedures are the practical methods for large scale syntheses of optically active pheromones with high optical purity.

L5 ANSWER 25 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:440991 HCPLUS
DOCUMENT NUMBER: 127:134801
TITLE: A new nucleation process for food industry crystallization
AUTHOR(S): Zhao, Qian; Yu, Shujuan; Gao, Dawei
CORPORATE SOURCE: Research Institute of Light Industry & Chemical Engineering, South China University of Technology, Canton, 510641, Peop. Rep. China
SOURCE: Huanan Ligong Daxue Xuebao, Ziran Kexueban (1996), 24(10), 7-11
PUBLISHER: Huanan Ligong Daxue Xuebao Bianji Weiyuanhui
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese
AB A review with 6 refs. A new nucleation process with synergy of organic solvent and ultrasonic wave was briefly introduced, which includes nucleation of Na glutamate in an aqueous solution having a degree of supersatn. 1.5 with the addition of EtOH and L-lysine under ultrasound stirring and nucleation of α -glucose with the addition of 6:1 (volume/volume)

EtOH-isopropanol to a supersatd. solution of α -glucose. Compared with the conventional methods of preparing nuclei for Na glutamate and hydrated α -glucose recrystn., this new process is characterized by a high nucleation rate, easy operation, good quality nuclei (perfect surface, uniform size, exact number of particles in the seed slurry, etc.). The crystals grow steadily and crystal shapes are perfect, so that the process is worth popularizing in the production of sodium glutamate, hydrate α -glucose and other food crystals.

L5 ANSWER 26 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:367429 HCPLUS
DOCUMENT NUMBER: 127:17984
TITLE: Advances in 2,6-naphthalene dicarboxylic acid purification technology
AUTHOR(S): Xia, Qing; Ma, Peisheng
CORPORATE SOURCE: Dep. Chem. Eng., Tianjin Univ., Tianjin, 300072, Peop. Rep. China
SOURCE: Shiyou Huagong (1997), 26(5), 325-331
CODEN: SHHUE8; ISSN: 1000-8144
PUBLISHER: Beijing Huagong Yanjiuyuan
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese
AB Purification technol. of 2,6-naphthalene dicarboxylic acid is reviewed with 39 refs., including alkali-acid-treatment, solvent recrystn ., chemical reaction, and esterification.

L5 ANSWER 27 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1997:192227 HCPLUS
DOCUMENT NUMBER: 126:252787
TITLE: Processes with supercritical solvents
AUTHOR(S): Simandi, Bela; Sawinsky, Janos
CORPORATE SOURCE: Budapesti Muszaki Egyetem, Vegyipari Muveletek Tanszek, Budapest, 1521, Hung.
SOURCE: Olaj, Szappan, Kozmetika (1996), 45(Spec. Issue), 3-11
CODEN: OSZKAT; ISSN: 0472-8602
PUBLISHER: METE
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Hungarian
AB The principles and practice of supercrit. fluid processing are reviewed with 38 refs. Current operations such as reactions in supercrit. fluids, crystallization (rapid expansion of supercrit. solns. and gas anti-solvent recrystn.) and supercrit. fluid chromatog. are briefly mentioned. The most important physico-chemical aspects of supercrit. fluid processing are discussed. Fundamentals of supercrit. fluid extraction (SFE) and separation are treated in detail. Laboratory (anal. sample preparation) and large scale equipment are compared. Reasonably large scale SFE processes and other operations with supercrit. fluid are listed. The supercrit. fluid research and applications development in U.S.A., Europe (e.g. Germany, United Kingdom, France) and Japan is demonstrated. Some of the most important trends affecting the uses for SFE are identified. These include environmental awareness, consumer market forces, enhanced competitiveness, changes in governmental regulations and supports. Recent SFE developments and activities of Hungarian groups are also presented.

L5 ANSWER 28 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1996:711912 HCPLUS

DOCUMENT NUMBER: 125:332746
TITLE: Crystallization - meeting the environmental challenge
AUTHOR(S): Sharratt, P. N.
CORPORATE SOURCE: Department Chemical Engineering, UMIST, Manchester, UK
SOURCE: Chemical Engineering Research and Design (1996), 74(A7), 732-738
CODEN: CERDEE; ISSN: 0263-8762
PUBLISHER: Institution of Chemical Engineers
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 42 refs. on recycling and waste reduction in industrial crystallization

processes. The underlying environmental driving forces are examined which will influence the science and technol. of crystallization. Needs for materials substitution, solvent elimination, reduction of waste generation during downstream processing of recrystn., washing, and drying, and design for recycling are identified as problem areas. While some of these problems reinforce already important research/development areas, others open new challenges.

L5 ANSWER 29 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1996:499056 HCPLUS
DOCUMENT NUMBER: 125:154115
TITLE: Supercritical fluid processing: opportunities for new
resist materials and processes
AUTHOR(S): Gallagher-Wetmore, Paula; Ober, Christopher K.; Gabor, Allen H.; Allen, Robert D.
CORPORATE SOURCE: Phasex Corp., Lawrence, MA, 01843, USA
SOURCE: Proceedings of SPIE-The International Society for
Optical Engineering (1996), 2725(Metrology,
Inspection, and Process Control for Microlithography
X), 289-299
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB Over the past two decades supercrit. fluids have been utilized as solvents for carrying out sepn. of materials as diverse as foods, polymers, pharmaceuticals, petrochems., natural products, and explosives. More recently they have been used for non-extractive applications such as recrystn., deposition, impregnation, surface modification, and as a solvent alternative for precision parts cleaning. Today, supercrit. fluid extraction is being practiced in the foods and beverage industries; there are com. plants for decaffeinating coffee and tea, extracting beer flavoring agents from hops, and separating oils and oleoresins from spices. Interest in supercrit. fluid processing of polymers has grown over the last ten yr, and many new purification, fractionation, and even polymerization techniques have emerged. One of the most significant motivations

for applying this technol. to polymers has been increased performance demands. More recently, with increasing scrutiny of traditional solvents, supercrit. fluids, and in particular carbon dioxide, are receiving widespread attention as "environmentally conscious" solvents. This paper describes several examples of polymers applications, including a few involving photoresists, which demonstrate that as next-generation advanced polymer systems emerge, supercrit. fluids are certain to offer advantages as cutting edge processing tools. 39
Refs.

L5 ANSWER 30 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1996:448483 HCAPLUS
DOCUMENT NUMBER: 125:194642
TITLE: Separation of enantiomeric mixtures without chiral
agents or resolution of derivatives
AUTHOR(S): Fogassy, Elemer
CORPORATE SOURCE: Szerves Kemial Technol. Tanszek, Budapesti Muszaki
Egyetem, Budapest, Hung.
SOURCE: Magyar Kemikusok Lapja (1996), 51(6), 225-230
CODEN: MGKLAL; ISSN: 0025-0163
PUBLISHER: Magyar Kemikusok Egyesulet
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Hungarian
AB A review with 18 refs. on the separation of enantiomeric mixts. by
crystallization of
their melt, recrystn., selective precipitation, partial salt formation
and distillation, or by extraction with a solvent of supercrit. state.

L5 ANSWER 31 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1996:183124 HCAPLUS
DOCUMENT NUMBER: 124:205902
TITLE: Recrystallization by using supercritical
fluids
AUTHOR(S): Fang, Ruibin; Gao, Chengwei; Xu, Qiheng; Ai, Ping
CORPORATE SOURCE: Dept. Chem., Yunnan Univ., Kunming, Peop. Rep. China
SOURCE: Huaxue Tongbao (1995), (11), 18-21
CODEN: HHTPAU; ISSN: 0441-3776
PUBLISHER: Kexue
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese
AB A review, with 20 refs., is given on the characteristics and applications
of recrystn. granulation and purification of fine chemical products by
using supercrit. fluids as solvents.

L5 ANSWER 32 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:517968 HCAPLUS
DOCUMENT NUMBER: 121:117968
TITLE: Supercritical fluids
AUTHOR(S): Clifford, Tony; Bartle, Keith
CORPORATE SOURCE: School Chemistry, University Leeds, UK
SOURCE: Chemistry Review (Deddington, United Kingdom) (1994),
3(4), 8-10
CODEN: CEEVE3; ISSN: 0959-8464
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with no refs. discussing the applications of supercrit. fluids.
The topics include solvent extraction, chromatog., reaction media,
recrystn., and waste disposal.

L5 ANSWER 33 OF 37 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:635008 HCAPLUS
DOCUMENT NUMBER: 119:235008
TITLE: Other uses for near-critical solvents:
chemical reaction and recrystallization in
near-critical solvents
AUTHOR(S): Caralp, M. H. M.; Clifford, A. A.; Coleby, S. E.
CORPORATE SOURCE: Sch. Chem., Univ. Leeds, Leeds, LS2 9JT, UK

SOURCE: Extr. Nat. Prod. Using Near-Crit. Solvents (1993),
50-83. Editor(s): King, M. B.; Theodore Reginald.
Blackie: Glasgow, UK.
CODEN: 59KWA6

DOCUMENT TYPE: Conference; General Review

LANGUAGE: English

AB A review with 115 refs. on near-critical fluids as reaction media and recrystn. in near-critical solvents.

L5 ANSWER 34 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1985:134518 HCPLUS
DOCUMENT NUMBER: 102:134518
ORIGINAL REFERENCE NO.: 102:21095a,21098a
TITLE: Modern trends in coal tar processing
AUTHOR(S): Manka, Helmut; Hupsch, Zygmunt; Rybicki, Felicjan
CORPORATE SOURCE: BPPK "Koksoprojekt", Zabrze, Pol.
SOURCE: Koks, Smola, Gaz (1984), 29(7), 156-61
CODEN: KSMGAA; ISSN: 0023-2823

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Polish

AB A review with 13 refs. The processing of coal tar (e.g., from distillation, solvent extraction, and recrystn.) to chemical intermediates and electrodes is described.

L5 ANSWER 35 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1975:127483 HCPLUS
DOCUMENT NUMBER: 82:127483
ORIGINAL REFERENCE NO.: 82:20366h,20367a
TITLE: Types of interaction of native sulfur and bitumens in the Vodinsk deposit and role of the latter in formation of sulfur deposits in the Middle Volga basin
AUTHOR(S): Valitov, N. B.
CORPORATE SOURCE: USSR
SOURCE: Voprosy Geologii i Neftenosnosti Srednego Povolzh'ya (1974), 4, 155-63
CODEN: VGNSAK; ISSN: 0372-5790

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Russian

AB A general discussion with 23 refs. on the effect of petroleum on the formation of S [7704-34-9] deposits. This occurred by certain components of petroleum reducing sulfates in the enclosing rocks, to sulfides, and then to S, in the presence of bacteria, and by the solvent power of hydrocarbons of petroleum, for recryst. particles of S. Two types of interaction of petroleum bitumens with crystals of elemental S were described. The migration of petroleum hydrocarbons into the S deposits of the Middle Volga basin played an essential part of the recrystn. of S ores, and enrichment of them with elementary S. A high content of total S in bitumens, and the presence in them of elementary S, was an addnl. positive sign in prospecting for S deposits.

L5 ANSWER 36 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1971:113704 HCPLUS
DOCUMENT NUMBER: 74:113704
ORIGINAL REFERENCE NO.: 74:18397a,18400a
TITLE: Separation, purification, concentration
AUTHOR(S): Arkenbout, Gerardus J.; Smit, Wilhelm M.
CORPORATE SOURCE: Fys. Chem. Inst., TNO, Zeist, Neth.
SOURCE: TNO Nieuws (1970), 25(10), 289-96

CODEN: TNONA3; ISSN: 0039-8446
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Dutch
AB A review is given of advances made in counter-current recrystn.,
zone melting, multistage normal freezing, and isothermal column
solvent recrystn. at the Institute for Phys. Chemistry
TNO.

L5 ANSWER 37 OF 37 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1968:74676 HCPLUS
DOCUMENT NUMBER: 68:74676
ORIGINAL REFERENCE NO.: 68:14371a,14374a
TITLE: New methods for preparing high purity salts of alkali
metals
AUTHOR(S): Stepin, B. D.
SOURCE: Trudy IREA (1967), No. 30, 109-17
CODEN: TKRKAM; ISSN: 0371-876X
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB New methods are reviewed which avoid the disadvantages of the methods
involving the precipitation and recrystn. of nonisomorphous compds.; the
new methods are based on: complexing the alkali metal ions into large,
neutral hydrophobic mols. with a low degree of ionization
(polyiodoiodates, tetraphenylborates, etc.); extraction purifications based on
decreasing the heat of hydration of the anions; and extraction purification of
Rb and Cs compds. by using strongly basic solvents. 21
references.

=> d his

(FILE 'HOME' ENTERED AT 18:05:35 ON 04 MAR 2008)

FILE 'REGISTRY' ENTERED AT 18:05:43 ON 04 MAR 2008

FILE 'HCPLUS' ENTERED AT 18:05:46 ON 04 MAR 2008

L1 79276 S RECRYSTALLIZATION?
L2 3 S L1 () AROMATIC () HYDROCARBON?
L3 0 S L2 AND REVIEW/DT
L4 1445 S L1 AND REVIEW/DT
L5 37 S L4 AND SOLVENT?
L6 0 S L5 AND AROMATIC?

=> s l4 and optical () isomer?
1010239 OPTICAL
21 OPTICALS
1010248 OPTICAL
(OPTICAL OR OPTICALS)
371946 ISOMER?
5593 OPTICAL (W) ISOMER?
L7 2 L4 AND OPTICAL (W) ISOMER?

=> d l7, ibib abs, 1-2

L7 ANSWER 1 OF 2 HCPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:760315 HCPLUS
DOCUMENT NUMBER: 129:335548
TITLE: Some considerations on the use of preparative liquid

AUTHOR(S): chromatography in the pharmaceutical industry
Mann, G.
CORPORATE SOURCE: Schering AG, Berlin, 13342, Germany
SOURCE: Analusis (1998), 26(7), M76-M82
CODEN: ANLSCY; ISSN: 0365-4877
PUBLISHER: EDP Sciences
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with no refs. The demand for products at higher and higher degrees of purity and the greater difficulty of the purification problems encountered (such as the resolution of optical isomers) is more and more forcing the pharmaceutical industry to use preparative high-performance liquid chromatog. (PHPLC). The present contribution discusses briefly the situation of the pharmaceutical industry today and its challenges. With practical examples, it illustrates how PHPLC can compete efficiently with other purification processes like recrystn. and presents some applications. Examples are also given to illustrate various techniques to make the chromatog. process more rugged and stable.
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1979:585758 HCAPLUS
DOCUMENT NUMBER: 91:185758
ORIGINAL REFERENCE NO.: 91:29789a,29792a
TITLE: Natural resolution and chemical resolution viewed from the solubility of metal complexes
AUTHOR(S): Shimura, Yoichi
CORPORATE SOURCE: Osaka Univ., Osaka, Japan
SOURCE: Gendai Kagaku (1979), 102, 46-53
CODEN: GNKGAN; ISSN: 0386-961X
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review with no refs. Natural resolution (resolution resulting from recrystn. into crystals of the optical isomers) and chemical resolution (resolution effected by using the reaction with optically active reagent) are discussed from the standpoint of the solubility of inorg. complexes.

=> s racemic () mixture? () resolution?
36321 RACEMIC
30 RACEMICS
36342 RACEMIC
(RACEMIC OR RACEMICS)
241368 MIXTURE?
1536299 MIXT
568675 MIXTS
1896926 MIXT
(MIXT OR MIXTS)
1972016 MIXTURE?
(MIXTURE? OR MIXT)
104783 RESOLUTION?
337601 RESOLN
8052 RESOLNS
341904 RESOLN
(RESOLN OR RESOLNS)

383166 RESOLUTION?

(RESOLUTION? OR RESOLN)

L8 27 RACEMIC (W) MIXTURE? (W) RESOLUTION?

=> s 18 and review/dt

2120441 REVIEW/DT

L9 3 L8 AND REVIEW/DT

=> d 19, ibib abs, 1-3

L9 ANSWER 1 OF 3 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:121010 HCPLUS

DOCUMENT NUMBER: 128:229374

TITLE: Model-based development of continuous processes for
lipase-catalyzed resolution of racemic mixtures in
organic solvents

AUTHOR(S): Indlekofer, Michael

CORPORATE SOURCE: Leinfelden-Echterdingen, Germany

SOURCE: Fortschritt-Berichte VDI, Reihe 3: Verfahrenstechnik
(1996), 436, 1-184

CODEN: FVVEFK; ISSN: 0178-9503

PUBLISHER: VDI Verlag GmbH

DOCUMENT TYPE: Journal; General Review

LANGUAGE: German

AB A review with >100 refs.

L9 ANSWER 2 OF 3 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1990:551539 HCPLUS

DOCUMENT NUMBER: 113:151539

TITLE: Crystallographic consequences of molecular dissymmetry

AUTHOR(S): Brittain, Harry G.

CORPORATE SOURCE: Bristol-Myers Squibb Pharm. Res. Inst., New Brunswick,
NJ, 08903, USA

SOURCE: Pharmaceutical Research (1990), 7(7), 683-90

CODEN: PHREEB; ISSN: 0724-8741

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 34 refs. including the linkage of mol. dissymmetry,
crystallog., and chirality; the separation of racemic mixts. using m.p. phase
diagrams; and resolution via direct crystallization

L9 ANSWER 3 OF 3 HCPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1989:179585 HCPLUS

DOCUMENT NUMBER: 110:179585

TITLE: Racemates versus enantiomerically pure drugs: putting
high-performance liquid chromatography to work in the
selection process

AUTHOR(S): Krstulovic, Ante M.

CORPORATE SOURCE: Synthelabo Rech., Paris, 75013, Fr.

SOURCE: Journal of Chromatography (1989), 488(1), 53-72

CODEN: JOCRAM; ISSN: 0021-9673

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 45 refs. discussing the importance of stereochem. in drug
development and the role of HPLC as a tool for anal. and preparative
enantioselective sepns.